1440 x 1080
226 fps

Fusion Series 🔳 🛙





Flex-Eye base model



- Flex-Eye configurable multispectral prism camera with two 1/2.9" CMOS imagers
- Customize wavebands for each sensor minimum width of 25 nm at 5 nm increments
- 3.45 x 3.45 μm pixel sizes with support for 1x2, 2x1, or 2x2 binning
- Up to 226 fps over high performance 10GBASE-T (10 gigabits per second) interface
- Backwards compatible to NBASE-T (5GBASE-T/2.5GBASE-T) and standard GigE (1000BASE-T)
- Single and multi-ROI modes provide higher speeds with lower processing loads
- 8, 10, or 12-bits per channel*
- Optional Bayer sensor can be used for waveband located within visible spectrum
- *5x5 de-Bayering available for RGB output on color channel*
- Supports separate or unified control of key camera parameters for each channel
- Excellent shock and vibration resistance
- GigE Vision 2.0 interface with dual-stream output
- C-mount lens mount

* Some video processing functions not available with 12-bit output



Specifications for FSFE-1600D-10GE (Flex-Eye)

Specifications FSFE-1600D-10GE (Flex-Eye) Sensor 1/2.9" 2-CMOS global shutter (IMX273) 1440 (h) x 1080 (v) x 2 sensors Active pixels Frame rate, full frame 226 frames/sec. @ 8-bit Active area 4.97 mm (h) x 3.73 mm (v) - 6.21 mm diagonal Pixel size 3.45 µm x 3.45 µm System clock 74.25 MHz (for pulse generator) Read-out modes 1440 (h) x 1080 (v) for each channel Full ROI (single) H: 16 to 1440 pixels in 16 pixel steps V: 8 to 1080 lines in 4 line steps ROI (multi) Up to 4 areas can be defined. No overlap. Binning 1x2, 2x1, 2x2 (NIR only) EMVA 1288 Parameters 12-bit output format Absolute sensitivity 4.85 p (λ = 525 nm), 10.8 p (λ = 810 nm) Maximum SNR 39.65 dB green, 39.36 dB NIR Traditional SNR* >60 dB (o dB gain, 10-bit) color NIR >60 dB (0 dB gain, 10-bit) Video signal output[†] Define 2 custom wavebands between 405-1000 nm. (Two streams) Bayer sensor option for waveband located in visible spectrum. 8/10/12-bit mono/Baver output. or RGB8, RGB10V1Packed, RGB10p32. Video modes Normal, Single ROI, Multi ROI, Sequencer (2 modes) Manual control - master mode o to +24 dB Gain Auto gain control - off, continuous, one-push R/B channels - individually -7 to +15 dB If Bayer sensor used White balance Off, 4 presets (3200K, 5000K, 6500K, 7500K), or (Baver waveband only) one-push/continuous AWB (3000K to 9000K) Gamma/LUT 0.45 to 1.0 (9 steps) or 257-point programmable LUT Shading correction Flat shading, color shading (if Bayer selected) Trigger input Opto In (2), Pulse Generators (4), Software, TTL In (2), NAND Out (2), User Output (4) Exposure modes Timed/EPS, Trigger Width (to ∞), Auto. Delayed readout option. Electronic shutter (can be set independently for each channel) 15.26 µs to 8 sec. in 1 µs steps Auto Level Control (ALC) Shutter range from 100 µs, gain range from o dB to +24 dB. Tracking speeds and max. values adjustable. Blemish compensation Up to 200 px/channel Operating temp. (ambient) -5°C to +45°C (20 to 80% non-condensing) Storage temp. (ambient) -25°C to +60°C (20 to 80% non condensing) Vibration 3G (20 Hz to 200 Hz, XYZ directions) Shock 50G CE (EN61000-6-2, EN61000-6-3) Regulations FCC Part 15 Class B, RoHS/WEEE Power 12-pin +10V to +25V DC. 10.4 W typical @ +12 V Lens mount C-mount Dimensions (H x W x L) 62 mm x 62 mm x 86.5 mm (excl. connectors) Weight 270 g

Ordering Information

FSFE-1600D-10GE

2-CMOS multispectral camera with GigE Vision

Americas

Phone (Toll-Free) 1 800 445 5444

Phone +1 408 383 0300

*Traditional SNR is based on random noise in a single frame, where EMVA SNR measurements consider more comprehensive noise sources and variance over time.

[†]12-bit output available in video processing bypass mode. See manual for details.

Europe, Middle East & Africa Phone +45 4457 8888 Fax +45 4491 8880

Asia Pacific Phone +81 45 440 0154 Fax +81 45 440 0166

4-M3 Depth5 jAj° G æ œ 6 C Mount 86 Ľ, ۲ . ∧UX 79

Outside size tolerance ± 0.3 mm

Connector pin-out

Pin 1 Ground

3

4

5

6

7

8

9

10 TTL in 1

11

Dimensions

DC In / Trigger



Opto In 1+

Opto Out 1-

Opto Out 1+

DC in +10V to +25 V

TTL out 1

Ground 12

Ø Ø

GigE Vision Interface

RJ-45 with locking screws

Pin Signal TRD+ (o) 1 TRD- (o) 2 TRD+ (1) 3 TRD+ (2) 4 TRD- (2) TRD- (1) 6 TRD+ (3) 7 TRD- (3) 8

Spectral configuration

Number of wavebands	2, custom-defined
Spectral range	405-1000 nm
Minimum waveband width	25 nm
Minimum width increment	5 nm
Maximum visible waveband	405-680 nm (FWHM**)
Bayer sensor option	For waveband in visible spectrum

Note: not all waveband configurations are supported. Use IAI's online configurator to submit desired locations and widths for feasibility checking.

**Full width of waveband at half of its maximum response (height)



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Fusion Series

4-M3 Depth5

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